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ABSTRACT

The four main components of the reading process are as follows: (1) physiological, the apprehension of printed symbols by the eyes and the engagement of the brain and the nervous system; (2) phonological, hearing the words in the mind's ear; (3) understanding, requiring semantic knowledge, syntactic knowledge, and related prior experience on the part of the reader; and (4) learning change, an addition or change in the person's mental "data base" which is usually unobservable. The components are, in different senses, hierarchical and holistic. Failure of the reading process can be analyzed as a failure of one or several component processes. (DS)

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TOWARD A DEFINITION OF READING

These are the four main components of our definition of reading:

Physiological -- (The whole process of reading is physiological in the sense that the brain and nervous system are engaged. The fact that this is not included within the description of this component is not intended to deny that. It is just that this particular component is intended only to describe the apprehension of the symbols used to represent words.) The symbols must be apprehended in some way. Typically this is through the eye but, as in the case of the blind, it may be through the sense of touch. For fluent readers, the eye may be, in part, controlled by the reader's knowledge of her/his language. Nonetheless, no reading is accomplished without the physiological component.

Phonological -- The beginning reader and the fluent reader reading difficult or unfamiliar material recode the material into the sounds of their language. That is, they say the words into their mind's ear. There is some controversy about whether fluent readers reading familiar material go through this phonological phase. It may be that they go directly from print to meaning. In any case, as noted above, even fluent readers subvocalize demonstrably when in difficult or unfamiliar material.

Understanding -- As used here the word simply means that the language used is, at least, potentially understandable to the reader. Lack of any one of the subcomponents listed below renders understanding impossible. To the degree that any one of the subcomponents listed below is deficient, so will understanding be deficient. The subcomponents are:

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Semantic Knowledge — The reader must know to what the words refer. If a paragraph contains a large number of words the reader doesn't know or a large number of words used in a way the reader doesn't know, understanding will be significantly diminished. If those mysterious words are key words in the paragraph, the entire paragraph meaning may be lost for want of knowledge of a very few words.

Syntactic Knowledge — Syntax refers to the way words are ordered in any language. Obviously the position of any word in a sentence has a great deal to do with what that word means in that sentence. Some linguists go so far as to say that morphemes (words) have no meaning unless they are ordered. That is, unless they are in context.

Experience — In order for a reader to understand written material s/he must have some prior experience with or prior experience analogous to the material being read.

Learning --Change -- The change is in the person's head and, so, is not observable. In computer terms, this component is equal to an addition to the data base. Whenever anything is decoded, understood, and retained, it becomes a part of the person's data base and, thereby, changes the data base. The change may simply be added information. It may change old concepts or even eliminate them. A ready example is the way our initial impressions of a person are modified or discarded as we come to know him/her better.

Another example is the way wide reading in a certain field constantly expands and changes our understanding of that field.

Some of the things which may affect a reader's internalization of the material s/he reads are her/his attitudes toward the subject, the language used, the format of the presentation, the purpose for reading, and the environment in which the reading is done.

Brief consideration of a single sentence example may help to bring the contributions of these various components into sharper perspective. Consider this from Henry David Thoreau: "The mass of men lead lives of quiet desperation."

The physiological level (as it relates to the apprehension of the symbols) is relatively quickly dispensed with. Your eyes and brain, together, have pro[illegible]ed all the symbols or, at least, enough of the symbols to allow you to [illegible]de (or recode) the material into . . .

The phonological level where the sentence is "spoken into your minds ear." (keep in mind that this process may be eliminated or extremely compressed in mature readers.) It is at this point that . . .

Understanding may take place. The subcomponent of semantics presents no problem. As a mature reader, there is noword in the sentence that you don't understand. The fact that "lead" has two pronunciations isn't any problem because the ordering of the words, or syntax, makes it clear which pronunciation, and, therefore which meaning, is appropriate. The subcomponent of experience is a bit more difficult to pin down. This is partly because it is so personal, so individual. Nonetheless, we can speculate. "Mass of men" is clearly intended to refer to people in general. (I'll have more to say about the choice of the gender specific noun later.) So now, based upon our understanding of the words and our prior experience, we

can say the sentence says "people's existence is one of quiet desperation." This leaves only the phrase "quiet deperation." What could that mean? Well, quiet, in this case, probably means uncomplaining. That is, these people leading these lives of desperation are not making a lot of noise about it. Desperation. What does desperation mean in this sentence? At this point I can only rely on my own experience. Desperation, to me, means a situation wherein something must be done very quickly and I don't know what to do. It means very stressful, very anxiety producing. So the phrase "quiet desperation" must mean a state of extreme anxiety or nervousness that a person doesn't speak about. Based upon semantics, syntax, and experience I now have a sentence which can be paraphrased as "people's existence is one of great stress and anxiety about which they do not speak." That certainly is not as elegant as the original but it does convey the message. Let's see if we've learned from it.

The learning, component has been said to be both unobservable and influenced by certain other extrinsic factors, such as attitude, purpose for reading, and other, perhaps more subtle factors. For example, the sentence under consideration might be given a negative reception by an ardent feminist because it uses the word "man" to indicate people. Another person might have strong religious beliefs which include a philosophy that runs counter to our sample statement. In either case, the change that will take place in each person is influenced by the attitudes s/he brings to the reading. Another example may be useful. If we read the sample statement as part of a class on American intellectual history, it would affect us differently than it would if we just saw it on a poster for sale at the local cutrate drugstore.

Keep in mind the components and the subcomponents and be aware of the general direction of the flow. The four components are:

1. Physiological
2. Phonological
3. Understanding
   a. semantics
   b. syntax
   c. experience
4. Learning (which may be thought of as unobservable change).

These components of a definition of reading are intended to help you better understand the process of reading. The components are, in one sense, hierarchical and, in another sense, holistic. They are hierarchical in the sense that in most cases one must occur before the other. But they are holistic in the sense that what occurs at one level may affect all the other levels. That is only to say that the levels are not discrete. They do not operate independently of one another.

If the process breaks down, if a person doesn't learn the process for some reason, we may be able to get some idea of where the problem lies if we have some idea of what the constituent conponents of the process are. Furthermore, in talking about the various concerns of the reading field, it is helpful if we are able to direct our discussion to a particular component or components of the process. And, since we have already said that the process is in some sense holistic, we can more easily determine the effect on the various other components if we have some idea of what the specific component deficit might be.